

Notice of Allowability

Application No.

10/606,223

Applicant(s)

TANAKA ET AL.

Examiner

VIJAY SHANKAR

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6-26-2003.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

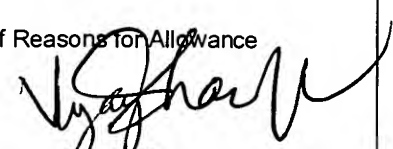
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


VIJAY SHANKAR
Primary Examiner
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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter

2. Claims 1-15 are allowed.
3. The following is an examiner's statement of reasons for allowance: The prior arts Kim et al (6,882,103), Battersby (6,448,718), Lee (5,648,790), and Lee (5,510,805) fail to teach a display device comprising: a pixel array having a plurality of pixels arranged two-dimensionally along a first direction and a second direction, respective groups of the plurality of pixels arranged along the first direction form a plurality of pixel-rows juxtaposed along the second direction, and respective groups of the plurality of pixels arranged along the second direction form a plurality of pixel-columns juxtaposed along the first direction; a scanning driver circuit selecting the plurality of pixel-rows by outputting scanning signals; a data driver circuit outputting a display signals to each of the plurality of pixel-columns and applying the display signal to each of the pixels belonging to any one of the plurality of pixel-columns and at least one of the plurality of pixel-rows selected by the scanning signal; and a display control circuit controlling display operation of the pixel array, wherein one line of image data is inputted to the data driver circuit for every vertical scanning period of the image data; the data driver circuit repeats a first step for performing an operation to generate a first display signal corresponding to respective one of the lines of the image data

one after another and to output the first display signals to each of the plurality of pixel-columns in every certain period N-times (N is a natural number equal to or greater than 2), and a second step for performing an operation to generate a second display signal (a blanking signal) making brightness of the pixel thereby equal to or darker than that before the second display is applied and to output the second display signals to each of the plurality of pixel-columns, alternately in the every certain period M-times (M is a natural number smaller than the N), alternately; the scanning driver circuit repeats a first selection step for selecting every Y rows (Y is a natural number smaller than the N/M) of the plurality of pixel-rows in response to every one of the N-times outputs of the first display signals in the first step sequentially from one end of the pixel array to another end of the pixel array along the second direction, and a second selection step for selecting every Z rows (Z is a natural number not smaller than the N/M) of the plurality of pixel-rows other than those selected in the first selection step in response to every one of the M-times outputs of the second display signals in the second step sequentially from the one end to the another end of the pixel array along the second direction, alternately; the scanning driver circuit repeats a selection operation of the plurality of pixel-rows throughout the pixel array during every frame period of the image data; a deviation of the certain period of the second step from a starting time of the pixel-rows selection operation throughout the pixel array is different between each one of the frame periods and another of the frame periods subsequent thereto; and a time difference between the

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deviation of the certain period of the second step from the starting time of the pixel-rows selection operation in the each one of the frame periods and that in the another of the frame periods subsequent thereto are regulated to be shorter than (N-2) times as long as the certain period.

The closest prior art, Kim et al (6,882,103), Battersby (6,448,718), Lee (5,648,790), and Lee (5,510,805), either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIJAY SHANKAR whose telephone number is (571) 272-7682. The examiner can normally be reached on M-F 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BIPIN SHALWALA can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Vijay Shankar', with a long horizontal flourish extending to the right.

VIJAY SHANKAR
Primary Examiner
Art Unit 2673

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